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09/807,061	07/09/2001	Christian Kratzsch	STUR-35	2351

7590

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EXAMINER

MOUTTET, BLAISE L

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/807,061

Applicant(s)

KRATZSCH ET AL.

Examiner

Blaise L Mouttet

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. The preliminary amendment submitted by applicant has been entered.

Drawings

2. The substitute drawings were received on May 6, 2002. These drawings are acceptable.

Specification

3. The examiner notes a minor error in the specification. On page 2, line 4 "DE 197 41 321 C1" should read --DE 197 41 329 C1-- which corresponds to the prior art as described.

Appropriate correction is required.

Claim Objections

4. The examiner notes a minor objection in syntax to claims 12 and 15.

In claim 12, line 2 "form" should read --from--.

In claim 15, line 4 "deviate" should read --deviates--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

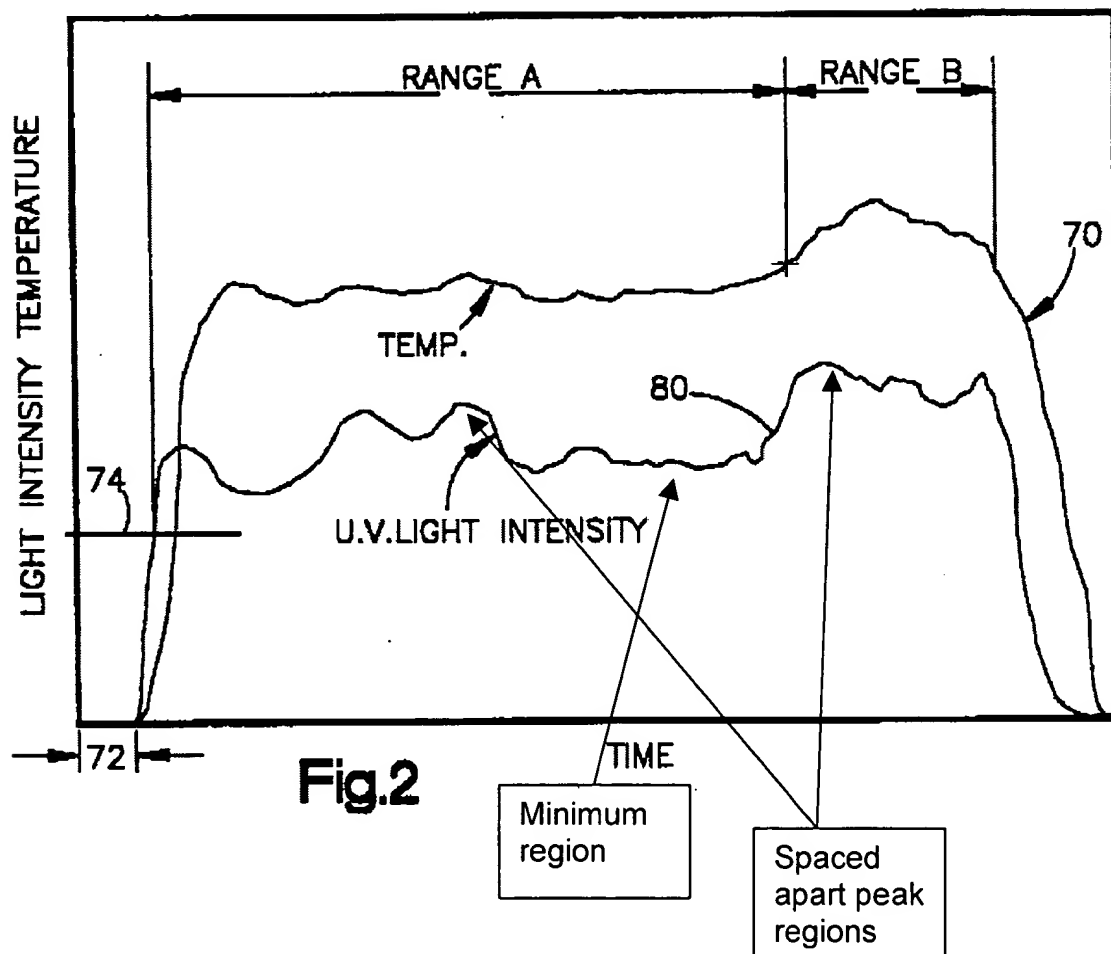
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 11 and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Shirk US 5,651,903.

Shirk discloses, regarding claim 11, a method for materials processing by means of plasma inducing high energy radiation, including laser radiation (column 2, lines 60-64), in which instantaneous intensity of the radiation is measured at plural locations (range A, range B) of a vapor capillary (22) (column 2, line 65 - column 3, line 7, column 4, lines 4-26), characterized in that shapes of two spaced apart peak intensity regions of the radiation emitted from the vapor capillary (22) and of a minimum region that is formed between the two peak intensity regions of extreme values are detected metrologically (figure 2, column 3, lines 57-66), metrologically detected shapes of the regions of extreme values are compared with predetermined region shapes (column 4, lines 34-40), and control of the detection and evaluation in the materials processing

operation takes place as a function of deviations of the detected shapes from the predetermined region shapes (column 4, lines 44-50).



Regarding claim 14, the detection and evaluation control of the materials processing operation takes place when the shape of one of the three regions of extreme value deviates from a predetermined region shape such as pinholes and interrupted welds (column 4, lines 27 - 50).

Regarding claim 15, the detection and evaluation control of the materials processing operation is performed when workpiece (18) moves in a feed direction (20)

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relative to the radiation (figure 1) and when the shapes deviate from predetermined shapes (column 4, lines 34-40).

Regarding claim 16, the detection and evaluation control of the materials processing operation is performed when the deviation in shapes exceeds a predetermined difference magnitude (column 6, lines 23-29).

6. Claims 11-14, 17 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Chou et al. US 5,961,859.

Chou et al. discloses, regarding claim 11, a method for materials processing by means of plasma inducing high energy radiation, including laser radiation (column 1, lines 64-66), in which instantaneous intensity of the radiation is measured at plural locations of a vapor capillary (column 2, lines 1-4), characterized in that shapes of two spaced apart peak intensity regions of the radiation emitted from the vapor capillary and of a minimum region (D) that is formed between the two peak intensity regions of extreme values are detected metrologically (figure 7, column 9, lines 49-62), metrologically detected shapes of the regions of extreme values are compared with predetermined region shapes (column 2, lines 7-10), and control of the detection and evaluation in the materials processing operation takes place as a function of deviations of the detected shapes from the predetermined region shapes (column 2, lines 16-20).

Regarding claims 12, 14 and 20, the detection and evaluation control of the materials processing operation is taught to be performed when the shape of the

minimum region and submaxima on both sides of a joint path deviate from a predetermined near circular (i.e. symmetrical) shape (column 11, lines 56-59).

Regarding claim 13, the detection and evaluation control of the materials processing operation takes place when there are sharp boundaries between the spaced apart peaks and minimum region (figure 7, column 9, lines 49-62).

Regarding claim 17, the detection and evaluation control of the materials processing operation takes place as a function of angular positions assumed by a straight line (A-B) passing through the peak intensity regions relative to a rotational feed direction of a workpiece being processed and moved relative to the radiation (column 4, lines 28-35, column 4, line 64 - column 5, line 20).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shirk US 5,651,903 in view of Torii et al. US 5,151,608.

Shirk discloses the claimed invention except for the specification that sporadically occurring, intensely radiating spots are detected in a region of measurement of the extreme values.

Torii et al. discloses that it is a natural consequence of laser welding measurement for sporadically occurring, intensely radiating spots (i.e. spatter light) to be detected (column 5, lines 40-55).

It would have been obvious to a person of ordinary skill in the art at the time of the invention that spatter light would sporadically occur in the region of measurement during the control of the materials processing of Shirk as taught by Torii et al. since Torii et al. teaches this to be a natural consequence of laser welding.

8. Claims 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shirk US 5,651,903 in view of Gross US 5,506,386.

Shirk discloses the claimed invention except that the control of the materials processing is performed on workpieces of different thickness.

Gross teaches that in laser welding operations applied to the production of motor vehicles it is useful to weld workpieces of different thickness (column 1, lines 43-46).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to apply the materials processing control of Shirk to weld workpieces of different thickness as taught by Gross.

The motivation for doing so would have been to facilitate the production of parts for motor vehicles as taught by column 1, lines 43-46 of Gross.

Additional Prior Art

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shirk US 5,283,416 discloses a laser welding process in which thermal detection of infrared radiation from the weld is monitored and compared with reference values to evaluate the weld process.

Shirk US 5,360,960 discloses a laser welding process in which light intensity of radiation from the weld is monitored and compared with reference values to evaluate the weld process.

Musasa et al. US 5,607,605 discloses a laser welding process in which the area and height of plasma are measured and compared with a predetermined value so as to assess the laser welding condition and control the weld laser.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Blaise Mouttet whose telephone number is

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(703) 305-3007. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell Adams, Art Unit 2853, can be reached at (703) 308-2847. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Blaise Mouttet May 2, 2003

Bm 5/2/2003



JUDY NGUYEN
PRIMARY EXAMINER